KENTUCKY ADULT EDUCATION – STUDENT GUIDE

Standards for Mathematics
Level 5
Use Math to Solve Problems and Communicate

Student Name _____

Entry Date _____ Site _____

Recognize and Compare Numbers

The adult student is able to:

___ Convert between any fraction, decimal, percent and *mixed number* to solve problems

___ Write very large or small numbers in *scientific notation* to solve problems

Rounding and Estimation

The adult student is able to:

Estimate solutions to problems using:
___ fractions ___ decimals
___ percents ___ *square roots*

___ Use estimation to check the reasonableness of a solution

Number Theory and Mathematical Symbols

The adult student is able to:

___ Explain and use the *LCM* and *GCF* to solve problems

___ Use the *commutative, associative* and *distributive properties* to solve problems

___ Apply *integer exponents* to solve problems

___ Describe and give examples of whole numbers, *integers* and *rational numbers*

Name and use the algebraic symbols:
___ **( )**
___ positive and negative *exponents*
___ ⌈ ⌉

Name and use geometric symbols:
___ °
___ ∠
___ ⊥
___ ∥
___ └
___ ≌
___ ~

Mathematical Operations

The adult student is able to:

Add, subtract, multiply and divide any size:
___ *integers* ___ fractions ___ decimals

Use a calculator to:
___ change the sign of a number
___ find the *square root*
___ use *exponents*
___ change fractions or *percents* to decimals

___ Use the *order of operations* to simplify *expressions* with *rational numbers* and *exponents*

___ Solve multi-step word problems involving magnitude, *ratio*, *proportion* and *rational numbers*

Measurements

The adult student is able to:

___ Solve multi-step problems involving conversion of customary measures

___ Solve multi-step problems involving conversion of metric measures

___ Solve multi-step problems involving *area* and *circumference* of circles

___ Solve multi-step problems involving the *area* of *polygons*

___ Solve multi-step problems involving the *volume* of *rectangular solids* and *cylinders*

___ Solve multi-step problems involving the *area* of *inscribed figures*

Geometry

The adult student is able to:

Apply geometric formulas and strategies to solve problems involving:
___ lines
___ circles
___ *angles*
___ *triangles*
___ quadrilaterals

___ Apply concepts of *regularity*, *symmetry*, *congruence* and *similarity*

___ Apply *Pythagorean relationship* to solve problems

Ratios, Proportions and Percents

The adult student is able to:

___ Calculate using *ratios* and *proportions* to solve multi-step word problems, including geometric problems of *similarity*

___ Calculate the *percentage* of *increase* or *decrease* to solve word problems

Data Interpretation and Probability

The adult student is able to:

___ Critique alternative ways of presenting data in real-world materials

___ Collect responses to questions and organize them by categories

___ Interpret and organize *data* to create various types of *graphs*, lists, charts and *tables*

___ Analyze *patterns* and relationships in *scatter plots*

___ Evaluate reports and explain misleading uses of *data*

Explain terms relating to data interpretation:
___ *minimum*
___ *maximum*
___ *spread*
___ *range*
___ *mean*
___ *medium*
___ *mode*

___ Explain the concepts of *dependent* and *independent probability*

Number Line and Grids

The adult student is able to:

___ Locate positive and negative fractional and decimal units on a number line

___ Demonstrate absolute value on a number line

___ Use a *table* of *ordered pairs* to graph *linear equations* in two *variables*

___ Determine the *slope* of a line as *positive*, *negative*, *zero* or *undefined*

___ Graph *equations* to determine the *x*- and *y-intercepts* of a line

___ Use coordinates to draw *transformations* of figures

Algebra

The adult student is able to:

___ Discuss the difference between *relations* and *functions*

___ Write a table of values using a graph of *ordered pairs*

___ Combine *like terms* to simplify expressions

___ Use the *distributive property* to simplify expressions

___ Use the *order of operations* as needed when evaluating expressions

___ Use *inverse operations* to solve *equations* and *inequalities*

___ Substitute known values to determine the effectiveness of an *equation*

___ Write expressions and *equations* or *inequalities* from word problems

___ Solve two-step *equations* in one *variable*

Apply formulas and write *equations* to solve problems involving:

___ time/rate/distance

___ *percentage* of *increase* or *decrease*

___ *ratio*/*proportion*